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ABSTRACT

The problem of the evaluation of graduates of teacher education programs has been a concern of institutions of higher learning for years. In order to meet the standards set by the National Council for the Accreditation of Teacher Education and to gather sufficient information for curriculum development and improvement, the Tennessee Technological University Teacher Evaluation Model was developed as a result of systematic follow up studies begun in 1970 of the graduates of its teacher education program. Objectives of the followup program were: (1) evaluation of the objectives of the teacher education program through a systematic study of the graduates; (2) provision of information for faculty concerned with making decisions regarding curriculum evaluation and development; and (3) aid in making long-range plans for improvement of the teacher education program. The purpose of this paper was to present the results of the application of the model to three groups of graduates who were followed for five years. Results indicated teaching performance peak was reached after three to four years in the profession; however, few significant differences were noted across time and between teaching level. (Author/GSK)

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A LONGITUDINAL STUDY OF TEACHERS

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Abstract

A LONGITUDINAL STUDY OF TEACHERS

A five year longitudinal study was conducted of the teaching effectiveness of three groups of bachelor's level graduates (1973, 1974, and 1975) of Tennessee Technological University. Data were gathered each year on over 250 variables from University records, supervising principals, students of the graduates, and by independent observers. Results of the study indicated that the three groups of graduates were similar at the time of graduation based on such factors as grade point average and scores from the National Teacher Examinations. During their first year of participation in the project there were few significant differences in the data collected. Results of the study indicated the graduates appeared to reach a peak in their teaching performance about the third or fourth year after entering the profession. However, there were few significant differences noted across time and between teaching level (elementary or secondary). The results of the study have implications for teacher selection and program improvement for the University.

A LONGITUDINAL STUDY OF TEACHERS

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The problem of the evaluation of graduates of teacher education programs has been a concern of institutions of higher education for a number of years. The need for institutions of higher education to evaluate their teacher education programs was given emphasis in the standards adopted in 1970 and 1977 by the National Council for the Accreditation of Teacher Education (Standards, 1970 & 1977). Standard 6.1 states "The institution . . . engages in systematic efforts to evaluate the quality of its graduates upon completion of their program of study and after they enter the teaching profession. This evaluation includes evidence of their performance in relation to program objectives" (p. 11). Standard 6.2 gives emphasis to use of evaluation results in program improvement and states "The institution regularly evaluates its teacher education programs and used the results of its evaluation in the modification and improvement of those programs." (p. 11).

In order to meet the above standards and gather sufficient information for curriculum development and improvement, Tennessee Technological University initiated a program of systematic followup studies in 1970 of the graduates of the teacher education program. These early studies led to the development and implementation in 1973 of the Tennessee Technological University Teacher Evaluation Model and was based in part on the work of Sandefur (1970). The major objectives of the evaluation program of the University include the following:

1. To evaluate the objectives of the teacher education program of the University through a systematic study of the graduates.

2. To provide information for faculty and administration concerned with teacher education programs at the University in making decisions pertinent to curriculum evaluation and development.

3. To aid in the process of making long-range plans for improving the total program of the University with particular emphasis on teacher education.

Purpose

The major purposes of the study resulting from implementation of the model were to evaluate graduates of the teacher education program and to apply the results to the process of making long-range plans for improving the total program of the University with particular emphasis on teacher education (Ayers, 1974, 1975, 1976a, b, 1977, 1978, and 1979). The specific purpose of this paper was to present the results of the application of the model to three groups of graduates of Tennessee Technological University who were followed for five years.

Methodology

The basic evaluation model provides input from four sources including (1) graduates of the teacher education program, (2) their supervisors (principals), (3) their students, and (4) independent observers. Following is a brief description of the instruments and methods used for collecting data from the four basic sources.

Career Base-Line Data

Career base-line data (including such variables as demographic information, ratings of the level of achievement of objectives of the teacher education program of the University, and self-ratings of teaching ability) were collected from a sample of graduates by use of questionnaires. Grade point averages, courses completed, and standardized test scores from such

instruments as the National Teacher Examinations were obtained from University permanent records and a measure of the graduates' personality was obtained by administration of the California F-Scale Forms 45 and 40 (Adorno, 1964).

Principals' Evaluations of Subjects

Principals' evaluations were obtained using the Teacher Evaluation by Supervisor Instrument (Sandefur, 1970). This instrument allowed for the rating of the graduates in four areas: (1) subject matter competence, (2) relations with students, (3) appropriateness of assignments and academic expectations, and (4) overall classroom effectiveness. A second instrument, also completed by the principals was designed to obtain a rating of the level of achievement by the graduates of the objectives of the teacher education program. Results of the administration of this instrument were not reported in this paper.

Student Evaluation of Teaching

There is considerable evidence that pupil evaluations of the teacher is a valid source of information. The Student Evaluation of Teaching (SET-I) developed by Veldman and Peck (Veldman, 1970) was utilized to obtain five dimensions of teacher behavior in grades 4-12. These dimensions include: (1) Friendly and Cheerful, (2) Knowledgeable and Poised, (3) Lively and Interesting, (4) Firm Control, and (5) Democratic Procedure. A second version of the instrument (SET-II) was developed by Haak, Kleiber and Peck (1972) for use in grades K-3. This instrument was used to assess five dimensions of teacher behavior as follows: (1) Rapport, (2) Interactional Competence, (3) Interaction Style, (4) Unreasonable Negativity, and (5) Fosterance of Self-Esteem.

Observational Systems

Three direct classroom observation systems were employed in the model including: (1) a ten-category system of interaction analysis (Amidon & Flanders, 1971), (2) the Classroom Observation Record (COR) developed by Ryans (1960), and (3) the Tuckman Teacher Feedback Form (Tuckman, 1976).

The ten-category interaction analysis system was used by trained research assistants to assess in a quantifiable manner the behavior of teachers and students engaged in the teaching-learning process. The COR measures four dimensions of student behavior and 18 dimensions of teacher behavior. Each dimension of pupil and teacher behavior was carefully described and defined in a glossary accompanying the recording form. A polarized seven-point interval was used by the research assistants to rate each pupil and teacher behavior dimension. The Tuckman Teacher Feedback Form measured four dimensions of teacher characteristics including (1) Creativity, (2) Dynamism, (3) Organized Demeanor, and (4) Warmth and Acceptance.

Subjects and Data Collection

Collection of data with the above instrumentation was accomplished in two ways. First, extensive use was made of the U.S. mail for collecting initial data from all graduates of the bachelor's level teacher preparation program. All individuals were contacted in the fall of the year after graduation during the past June or August for the collection of initial demographic information. Each year, 1973 through 1975, approximately 300 individuals completed degree requirements and 55 percent (165) actually entered teaching in the fall. All graduates who were teaching within a 100-mile radius of the University were asked to participate in

the study. This area was chosen because of financial limitations of the study. About 70 percent (115) of the graduates had found positions within the defined geographical area. Following is a summary of the number of subjects who agreed to participate in the study by year and teaching level: 1973, 28 elementary and 17 secondary; 1974, 29 elementary and 2 secondary; and 1975, 22 elementary and 9 secondary. Throughout each five year phase of the study, there was considerable attrition. The rate of attrition has varied and is shown in the tables in the second part of the results section.

The graduates who volunteered to participate in the study were visited by specially trained graduate assistants for purposes of collecting additional data. Visits occurred in the spring of the first full year of teaching and in the late fall of years two through five. The assistants spend approximately a half day in each subject's classroom completing the observation instruments, assisting the children in each subject's classroom with completion of the Student Evaluation of Teaching, and collecting data through interviews.

Statistical Analyses

Basic descriptive and inferential statisical methods were used to analyze the data. Data analyses in this paper were confined to descriptive statistics and the use of analysis of variance and t-tests to determine changes across time and differences among groups.

Results of Comparison of First Year Data for the Three Groups of Subjects

Initially, the first year data on each group of subjects (1973, 1974 and 1975) were compared to determine initial differences. The data were divided by data source and by teaching level (elementary and secondary).

Career Base-Line Data

This section contains a summary of the preliminary career base-line data for the three groups of subjects in the study. Included in this section was information taken from each subject's college transcript and other records available in the College of Education of the University. Also included were scores from the California F-Scale.

Table 1 shows a summary of the number of individuals participating in the study and the mean grade point average achieved on four years of college work. There were no differences noted between the elementary and secondary groups nor across the three years. Individuals who have participated in the study have generally achieved grade point averages that were about 0.30 higher (on a 4.00 scale) than for the total graduating class.

Table 1

Mean Grade Point Averages for Participants in Study*

Year of Graduation	N	$\bar{X}$	SD
1973	45	2.92	0.40
1974	31	3.01	0.72
1975	31	2.92	0.57

*(4.00 = A; 3.00 = B, etc.)

All students prior to enrollment at the University must complete the American College Test (ACT). Table 2 shows a comparison of scores for the elementary and secondary subjects. Use of analysis of variance technique indicated that there were no significant differences across teaching level and year of graduation.

Table 2

COMPARISON OF ACT SCORES FOR FIRST YEAR ELEMENTARY AND SECONDARY TEACHERS (1973-1975)

Score	Elementary						Secondary					
	1973(N=41)		1974(N=24)		1975(N=17)		1973(N=9)		1974(N=2)		1975(N=9)	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
English	19.9	4.8	18.1	4.9	19.5	4.8	17.8	5.0	16.0	4.2	17.4	7.0
Mathematics	16.1	5.5	16.0	6.0	16.2	5.0	19.0	4.4	19.0	4.2	17.3	5.9
Social Science	17.3	5.4	16.5	5.7	20.4	5.3	16.8	7.3	16.5	10.6	14.1	8.0
Science	19.3	4.0	19.2	4.6	20.3	3.9	19.5	5.4	25.5	0.7	17.0	6.3
Composite	18.5	3.7	17.6	3.8	19.2	3.6	18.3	4.0	19.5	0.7	16.8	5.4

The California F-Scale Forms 45 and 40 was used to assess one aspect of the personality of the subjects. The F-Scale range of possible values was 28 to 196 with 112 the mid-point. The lower the values, the more non-authoritarian the indication. The mean score for all graduates who have participated in the study over the past seven years was 100. Table 3 shows a comparison of F-Scale scores by teaching level for the three groups. There were no significant differences among the groups or levels.

Table 3

COMPARISON OF F-SCALE SCORES FOR FIRST YEAR ELEMENTARY AND SECONDARY TEACHERS (1973-1975)

Level	1973			1974			1975		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
Elementary	30	104.6	21.3	29	101.3	20.6	22	101.5	23.6
Secondary	13	107.2	20.0	2	102.5	21.9	9	102.9	27.1

Table 4 shows a comparison of Weighted Common Examinations scores from the National Teacher Examinations for elementary and secondary subjects by year of graduation. In general, secondary subjects had achieved slightly higher scores than the elementary subjects. However, the differences were not significant. Comparisons across years by group indicated no significant differences.

Table 4

COMPARISON OF WEIGHTED COMMON EXAMINATION SCORES FROM THE NTE FOR FIRST YEAR ELEMENTARY AND SECONDARY TEACHERS (1973-1975)

Level	1973			1974			1975		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
Elementary	30	550.3	60.4	23	573.3	78.2	22	577.7	79.1
Secondary	14	560.3	47.3	2	598.5	54.4	9	543.8	87.9

Principals' Evaluations of Subjects

The principal of each subject was asked to complete the Teacher Evaluation by Supervisor Form which consisted of four questions encompassing the following areas: (a) subject matter competence, (b) relations with students, (c) appropriateness of assignments, and (d) overall effectiveness. Table 5 shows the data for the elementary and secondary groups entering the study in 1973, 1974, and 1975. Over the three year period there were no significant differences in ratings given to the elementary or the secondary groups.

Student Evaluation of Teaching

Two forms of the Student Evaluation of Teaching were employed in the study. The SET-I was used with children in the classes of subjects above

Table 5

COMPARISON OF PRINCIPALS' RATINGS OF FIRST YEAR ELEMENTARY AND SECONDARY TEACHERS (1973-1975)

Level	Elementary						Secondary					
	1973(N=28)		1974(N=27)		1975(N=20)		1973(N=17)		1974(N=1)		1975(N=8)	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
I SUBJECT MATTER COMPETENCE	4.2	0.8	4.0	0.8	4.1	0.6	4.0	0.7	4.0	0.0	4.2	0.7
II RELATIONS WITH STUDENTS	4.3	0.8	4.1	0.7	4.4	0.6	3.9	0.8	4.0	0.0	4.5	0.7
III APPROPRIATENESS OF ASSIGNMENTS	4.3	0.7	4.2	0.7	4.3	0.7	3.9	0.7	5.0	0.0	4.3	0.9
IV OVERALL EFFECTIVENESS	4.2	0.7	4.0	0.8	4.1	0.7	4.0	0.6	5.0	0.0	4.4	0.7

the third grade, while the SET-II was used with children below the fourth grade. The instruments measure similar traits. Table 6 shows the data for the Student Evaluation of Teaching-I for those elementary subjects teaching in grades 4 through 6. In general, there were no differences across the three groups. Table 6 shows similar data for the secondary subjects. There were no significant differences between the 1973 and 1975 groups; however, there were significant differences between the 1973 and 1974 and 1974 and 1975 groups. It should be noted that the sample size in the 1974 group was one, thus the differences are meaningless.

Table 6

COMPARISON OF SET-I SCORES FOR FIRST YEAR ELEMENTARY AND SECONDARY TEACHERS (1973-1975)

Factor	Elementary						Secondary					
	1973(N=12)		1974(N=8)		1975(N=10)		1973(N=13)		1974(N=1)		1975(N=9)	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
I FRIENDLY AND CHEERFUL	341.1	40.6	325.3	48.2	344.8	34.0	347.6	51.6	219.0	0.0	350.7	33.1
II KNOWLEDGEABLE AND POISED	341.0	48.2	322.4	43.5	348.0	26.1	351.8	27.1	370.0	0.0	396.6	23.7
III LIVELY AND INTERESTING	303.3	56.1	315.6	40.4	298.8	41.5	310.6	27.1	292.0	0.0	308.8	37.1
IV FIRM CONTROL (DISCIPLINE)	332.8	32.9	305.4	38.7	324.2	37.2	282.4	24.4	348.0	0.0	283.2	28.0
V NON-DIRECTIVE (DEMOCRATIC PROCEDURE)	233.8	38.5	255.9	40.8	245.3	57.3	276.3	41.7	170.0	0.0	250.0	40.1
COMPOSITE SCORE	315.8	23.9	304.6	19.0	312.2	28.5	315.3	34.6	280.0	0.0	307.8	23.7

Student Evaluation of Teaching-II data were collected for those subjects teaching in grades K-3, beginning in 1974. The results of the use of the instrument are shown in Table 7. Use of the t-test indicated that there were no significant differences between the two groups on each of the five factors from the instrument.

Observational Systems

Three observational systems were employed to gather data in the classroom of the subjects. The systems were employed by specially trained graduate assistants. All observations were made during a half-day period (usually during the morning hours). Following is a more complete description

Table 7

COMPARISON OF SET-II SCORES FOR FIRST YEAR ELEMENTARY TEACHERS, GRADES K-3 (1973-1975)

	Factor	1973(N=0)*		1974(N=20)		1975(N=13)	
		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
I	RAPPORT	---	---	5.14	1.70	5.83	0.74
II	INTERACTIONAL COMPETENCE	---	---	5.35	2.81	4.45	0.38
III	STIMULATING, INTERACTION STYLE (COMBINATION OF RAPPORT AND INTERACTIONAL COMPETENCE)	---	---	9.54	2.54	10.28	1.01
IV	UNREASONABLE NEGATIVITY	---	---	8.07	2.07	8.68	0.99
V	FOSTERANCE OF SELF-ESTEEM	---	---	6.49	1.77	6.48	0.78

*Instrument not introduced into the study until 1974-75.

of the results of the application of the instruments during the first year of each group of subject's participation in the project.

Interaction Analysis. A ten category interaction analysis system was utilized to record observed classroom behavior of the subjects. This system basically consisted of four categories of indirect teacher talk, three categories of direct teacher talk, two categories of student talk and one non-verbal category. Following are the ten categories: (1) Accepts Feelings, (2) Praises or Encourages, (3) Accepts or Uses Ideas of Students, (4) Asks Questions, (5) Lecturing, (6) Giving Directions, (7) Criticizing or Justifying Authority, (8) Student Talk-Response, (9) Student Talk-Initiation, and (10) Silence or Confusion.

The observers recorded a numerical value corresponding to a particular category every three seconds or every time the categories changed.

Thus, an objective record was obtained of the variable interaction within the classroom. Three to six, twenty-minute observations per subject were recorded during each half-day visit. Ratios were computed to reflect the climate of the classroom.

i/d	Indirect to Direct Ratio = Sum of categories 1,2,3 divided by sum of categories 6,7
I/D	Indirect to Direct Ratio = Sum of categories 1,2,3,4 divided by sum of categories 5,6,7
ST/TT	Student Talk to Teacher Talk = Sum of categories 8,9 divided by sum of categories 1-7
Sil/Tot	Silence to Total Teaching = Category 10 divided by sum of categories 1-7
Lec/Tot	Lecture to Total Teaching = Category 5 divided by sum of categories 1-7

Table 8 shows the pertinent ratios, respectively, for the elementary and secondary groups. The 1975 elementary and secondary groups had significantly higher I/D ratios than the 1973 and 1974 graduates. No explanation can be offered for this occurrence. As might be expected, the student talk to teacher talk ratio for the elementary group was generally higher than for the secondary group. Also, the secondary group tended to be lecturing more than the elementary group.

Classroom Observation Record. The Classroom Observation Record was completed on each subject by the observers at the conclusion of each visit. The instrument consisted of 22 items, four designed to assess pupil behavior and the remaining 18 to assess dimensions of teacher behavior. Previous studies led to the conclusion that the instrument was measuring three factors as follows: Factor I consisted of items 10, 12, 14, 15, 16, 17 and 18, and corresponded in part to Ryan's Y_0 factor

Table 8

COMPARISON OF RATIOS FROM INTERACTION ANALYSIS FOR FIRST YEAR ELEMENTARY AND SECONDARY TEACHERS (1973-1975)

Factor	Elementary						Secondary					
	1973(N=29)		1974(N=28)		1975(N=20)		1973(N=13)		1974(N=2)		1975(N=8)	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
I/D	1.30	1.13	1.40	2.04	2.62	2.37	2.47	3.12	0.53	0.24	4.61	4.73
i/d	0.91	0.69	0.69	0.46	0.76	0.36	0.60	0.91	0.24	0.31	0.71	0.66
ST/TT	0.66	0.65	0.81	1.23	0.53	0.79	0.45	0.35	0.40	0.42	0.47	0.19
Sil/Tot	0.54	1.14	0.53	0.80	0.35	0.20	0.31	0.27	0.23	0.23	0.49	0.60
Lec/Tot	0.41	0.14	0.38	0.14	0.47	0.10	0.63	0.21	0.63	0.49	0.58	0.19

of responsible, systematic, businesslike versus evading, unplanned, slipshod teacher behavior; Factor II consisted of items 5, 6, 7, 8, 9, 11, 13, 19, 20, 21 and 22, and corresponded to Ryan's X_0 factor of kindly, understanding, friendly versus aloof, egocentric, restricted teacher behavior; Factor III consisted of items 1, 2, 3, and 4 which described pupil behavior (Ayers, 1978). Scores from individual items were summed to obtain a factor score. Table 9 contains summaries of the means and standard deviations for the three factor scores for the two groups. No significant differences were noted between the groups and across the three year period.

Tuckman Teacher Feedback Form. The Tuckman Teacher Feedback Form was introduced during the 1976-77 phase of the study. Therefore, no first year data are available on the subjects who entered the project during 1973, 1974 or 1975.

Table 9

COMPARISON OF COR FACTORS FOR FIRST YEAR ELEMENTARY AND SECONDARY TEACHERS (1973-1975)

Factor	Elementary						Secondary					
	1973(N=29)		1974(N=20)		1975(N=23)		1973(N=13)		1974(N=2)		1975(N=9)	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
I	43.6	2.8	43.6	4.5	45.0	4.6	39.2	5.3	39.0	9.9	40.1	8.7
II	63.4	6.3	67.8	5.6	68.9	6.0	59.8	6.8	56.0	17.0	60.2	10.3
III	24.0	2.3	25.9	3.8	27.3	4.0	21.0	3.0	19.5	3.5	22.1	0.6

Summary

In summary, this section contained a comparison of data for three groups of first year individuals who were ultimately followed in part for five years. Comparisons across years and by level (elementary and secondary) indicated few differences in mean scores. Information for the secondary group tended to be somewhat erratic due to the small sample size in some years. Career base-line data indicated few differences across the three years of the study for the 1973 through 1975 graduates. In general, the principals rated the subjects highly in such areas as relations with students and appropriateness of assignments. Based on measures obtained with the California F-Scale, the subjects tended to be somewhat non-authoritarian in their beliefs. Employing interaction analysis and other classroom observation techniques revealed the subjects were using more indirect than direct teaching methods and were exhibiting many of the characteristics of good teachers as reported in the literature. Student ratings of the subjects indicated concerns in the areas of democratic procedure and discipline.

Results of Comparison of Three Groups of Teachers Across Five Years

This section was divided into three major subsections each corresponding to a major source of data. These sections include principal evaluations, student evaluations and observation by independent observers. Each subsection is further divided into data collected by teaching level, i.e., elementary (Grades K-6) and secondary (Grades 7-12). It should be noted that in many cases attrition from the study resulted in relatively small sample sizes in later years of the project. Throughout the course of data examination, the analysis of variance technique was employed using a year by teaching level design and where appropriate, repeated measures of analyses of variance (over the first three or four years) were utilized to determine if teacher behavior changed as a result of teaching experience. N sizes for these later analyses were on the order of 22 elementary subjects and 14 secondary subjects. Since there were few differences, ANOVA tables were omitted from this paper.

Principal Evaluation of Subjects

Principal evaluations of the elementary subjects are shown in Table 10. In general, the mean ratings by the principals increased from the first to the third year and thereafter remained about constant. This same pattern was evident for the ratings of secondary teachers (Table 11). There were no significant differences across time or between the two teaching levels.

Student Evaluation of Teaching

Table 12 shows comparisons across five years for data obtained by use of the Student Evaluation of Teaching-I in the classrooms of teachers in grades 4 through 6. In general, mean ratings of the subjects reached

Table 10

COMPARISON OF PRINCIPALS' RATINGS OF ELEMENTARY TEACHERS ACROSS FIVE YEARS

	Factor	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
		N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I	SUBJECT MATTER COMPETENCE															
	1973 - 1977	28	4.2	0.8	18	4.2	0.8	12	4.2	0.8	10	4.3	0.7	2	4.5	0.7
	1974 - 1978	27	4.0	0.8	16	4.2	0.8	10	4.4	0.7	8	4.4	0.7	2	4.5	0.7
	1975 - 1979	19	4.0	0.6	11	4.3	0.8	10	4.3	1.0	4	4.7	0.6	4	4.0	0.7
II	RELATIONS WITH STUDENTS															
	1973 - 1977	28	4.3	0.8	18	4.3	0.8	12	4.3	1.0	10	4.7	0.5	2	5.0	0.0
	1974 - 1978	27	4.1	0.7	16	4.2	1.0	10	4.4	0.8	8	4.6	0.7	2	5.0	0.0
	1975 - 1979	19	4.4	0.6	11	4.5	0.7	10	4.6	0.5	4	5.0	0.0	4	4.3	0.8
III	APPROPRIATENESS OF ASSIGNMENTS															
	1973 - 1977	28	4.3	0.7	18	4.1	0.7	12	4.3	0.9	10	4.4	0.5	2	5.0	0.0
	1974 - 1978	27	4.2	0.9	16	4.1	0.8	10	4.4	0.7	8	4.5	0.8	2	5.0	0.0
	1975 - 1979	19	4.3	0.7	11	4.2	0.8	10	4.4	0.8	4	4.7	0.6	4	4.2	0.4
IV	OVERALL EFFECTIVENESS															
	1973 - 1977	28	4.2	0.7	18	4.3	0.8	12	4.3	0.8	10	4.6	0.5	2	4.5	0.7
	1974 - 1978	27	4.0	0.8	16	4.3	0.8	10	4.2	0.8	8	4.4	1.1	2	4.5	0.7
	1975 - 1979	19	4.1	0.7	11	4.2	0.9	10	4.4	0.8	4	4.7	0.6	4	4.1	0.4

Table 11

COMPARISON OF PRINCIPALS' RATINGS OF SECONDARY TEACHERS ACROSS FIVE YEARS

Factor	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I SUBJECT MATTER COMPETENCE															
1973 - 1977	17	4.0	0.7	11	4.0	0.6	10	4.2	0.6	4	4.0	0.0	6	4.3	0.5
1974 - 1978	1	4.0	0.0	2	4.5	0.7	2	4.5	0.7	0	---	---	0	---	---
1975 - 1979	9	4.6	0.7	4	4.5	1.0	2	5.0	0.0	1	5.0	0.0	0	---	---
II RELATIONS WITH STUDENTS															
1973 - 1977	17	3.9	0.8	11	3.6	1.1	10	4.0	0.7	4	4.8	0.5	6	4.3	0.8
1974 - 1978	1	4.0	0.0	2	4.0	0.0	2	4.0	1.4	0	---	---	0	---	---
1975 - 1979	9	4.7	0.7	4	5.0	0.0	2	5.0	0.0	1	5.0	0.0	0	---	---
III APPROPRIATENESS OF ASSIGNMENTS															
1973 - 1977	17	3.9	0.7	11	3.7	0.7	10	4.5	0.5	4	4.0	0.0	6	4.0	0.6
1974 - 1978	1	5.0	0.0	2	4.0	0.0	2	4.0	1.4	0	---	---	0	---	---
1975 - 1979	9	4.3	0.9	4	4.7	0.5	2	4.5	0.7	1	5.0	0.0	0	---	---
IV OVERALL EFFECTIVENESS															
1973 - 1977	17	4.0	0.6	11	3.6	0.7	10	4.0	0.8	4	4.0	0.0	6	4.2	0.4
1974 - 1978	1	5.0	0.0	2	4.0	0.0	2	4.0	1.4	0	---	---	0	---	---
1975 - 1979	9	4.4	0.7	4	4.7	0.5	2	4.5	0.7	1	5.0	0.0	0	---	---

Table 12

COMPARISON OF SET-I SCORES FOR ELEMENTARY TEACHERS ACROSS FIVE YEARS

Factor	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I FRIENDLY AND CHEERFUL															
1973 - 1977	12	341.1	40.6	8	332.3	47.7	6	334.8	39.5	4	311.8	50.3	3	307.3	34.6
1974 - 1978	8	325.3	48.2	6	344.3	37.8	6	342.3	38.4	6	332.0	78.4	3	307.3	34.6
1975 - 1979	10	344.8	34.0	6	355.7	32.0	4	346.3	33.9	3	329.0	30.0	3	327.3	23.2
II KNOWLEDGEABLE AND POISED															
1973 - 1977	12	341.0	48.2	8	333.8	32.6	6	351.5	25.5	4	329.3	32.6	3	336.3	19.0
1974 - 1978	8	322.4	43.5	6	365.7	15.6	6	352.5	16.9	6	346.8	28.5	3	336.3	19.0
1975 - 1979	10	348.0	26.1	6	336.5	35.7	4	345.0	41.0	3	344.0	29.5	3	358.7	27.8
III LIVELY AND INTERESTING															
1973 - 1977	12	303.3	56.1	8	267.0	47.3	6	281.3	58.4	4	270.3	46.5	3	293.0	37.6
1974 - 1978	8	315.6	40.4	6	297.2	34.7	6	322.8	32.6	6	353.2	12.8	3	293.0	37.6
1975 - 1979	10	298.8	41.5	6	312.7	53.2	4	309.0	54.0	3	310.3	38.9	3	302.6	26.5
IV FIRM CONTROL															
1973 - 1977	12	332.8	32.9	8	313.3	35.1	6	304.3	28.5	4	296.8	20.1	3	270.7	48.8
1974 - 1978	8	305.4	38.7	6	315.0	42.6	6	327.2	16.6	6	317.2	60.8	3	270.7	48.8
1975 - 1979	10	324.2	37.2	6	310.7	51.1	4	315.3	52.4	3	316.2	45.3	3	318.3	47.0
V NON-DIRECTIVE (DEMOCRATIC PROCEDURE)															
1973 - 1977	12	233.8	38.5	8	214.6	52.8	6	266.3	48.6	4	214.8	13.7	3	255.3	54.2
1974 - 1978	8	255.9	40.8	6	283.2	47.0	6	279.7	45.1	6	283.0	38.8	3	255.3	54.2
1975 - 1979	10	245.3	57.3	6	277.5	45.3	4	268.0	45.5	3	266.5	38.3	3	254.3	23.1
COMPOSITE SCORE															
1973 - 1977	12	315.8	23.9	8	302.8	41.0	6	303.0	28.6	4	284.3	24.8	3	292.7	19.5
1974 - 1978	8	304.6	19.0	6	321.2	23.4	6	325.8	25.9	6	323.0	32.0	3	292.7	19.5
1975 - 1979	10	312.2	28.5	6	318.5	47.0	4	316.3	49.2	3	313.2	34.7	3	312.7	27.6

a high during the third or fourth year of the study and then began to drop. In part, this corresponds with the ratings given by the principals. A similar pattern (Table 13) was in evidence for teachers in Grades 7-12. Basically, there were no significant differences between years in the study and also between grade levels taught. Use of repeated measures of analysis of variance indicated no significant differences across years in the study for the various groups. Mean scores generally reached a high during the third year the participants were in the study.

Table 14 shows comparisons of data across five years for subjects teaching in Grades K-3 gathered by use of the Student Evaluation of Teaching-II. Even though samples sizes were small, a pattern of scores was in evidence for the various factors that was similar to the results attained in the classrooms of teachers in Grades 4-6, i.e., higher mean ratings were noted in the third year.

Observational Instruments

Three observational instruments were completed by specially trained graduate assistants. This section was subdivided corresponding to the instruments used: (1) Interaction Analysis, (2) the Classroom Observation Record, and (3) the Tuckman Teacher Feedback Form.

Interaction Analysis. Table 15 shows comparisons of the interaction analysis data collected over three five year periods for the elementary subjects. In general, the groups, showed increases from the first to the third year of teaching in the indirect to direct teaching ratios. Thereafter, the ratios remained at about the same level. Student talk to teacher talk, silence to total teaching and lecture to total teaching ratios were somewhat erratic with no set pattern, across five year periods.

Table 13

COMPARISON OF SET-I SCORES FOR ELEMENTARY TEACHER ACROSS FIVE YEARS

Factor	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I FRIENDLY AND CHEERFUL															
1973 - 1977	13	347.6	51.6	12	339.6	47.5	10	331.9	48.6	4	305.5	100.3	6	311.1	77.2
1974 - 1978	1	219.0	0.0	2	332.0	7.1	2	296.5	41.7	0	-----	-----	0	-----	----
1975 - 1979	9	350.7	33.1	4	364.3	23.6	2	333.5	20.5	2	323.0	26.3	0	-----	----
II KNOWLEDGEABLE AND POISED															
1973 - 1977	13	351.8	27.1	12	344.3	35.3	10	359.8	24.5	4	354.5	22.1	6	331.2	37.8
1974 - 1978	1	370.0	0.0	2	349.5	3.5	2	337.0	46.7	0	-----	----	0	-----	----
1975 - 1979	9	346.6	23.7	4	356.3	23.3	2	349.0	28.3	2	335.5	9.2	0	-----	----
III LIVELY AND INTERESTING															
1973 - 1977	13	310.6	27.1	12	299.3	69.1	10	304.6	53.4	4	315.5	66.6	6	277.5	86.2
1974 - 1978	1	292.0	0.0	2	325.5	21.9	2	286.0	94.8	0	-----	----	0	-----	----
1975 - 1979	9	308.8	37.1	4	298.0	53.5	2	304.5	12.0	2	283.0	5.9	0	-----	----
IV FIRM CONTROL															
1973 - 1977	13	282.4	24.4	12	286.4	35.3	10	297.0	32.2	4	277.5	30.6	6	294.3	32.3
1974 - 1978	1	398.0	0.0	2	336.0	17.0	2	310.0	36.8	0	-----	----	0	-----	----
1975 - 1979	9	283.2	28.0	4	300.3	26.5	2	318.0	38.1	2	281.5	21.2	0	-----	----
V NON-DIRECTIVE (DEMOCRATIC PROCEDURE)															
1973 - 1977	13	276.3	41.7	12	268.7	56.6	10	269.1	43.9	4	274.5	66.5	6	259.0	63.0
1974 - 1978	1	170.0	0.0	2	238.0	66.5	2	214.5	27.6	0	-----	----	0	-----	----
1975 - 1979	9	250.0	40.1	4	305.8	35.4	2	238.5	20.6	2	249.0	36.7	0	-----	----
COMPOSITE SCORE															
1973 - 1977	13	315.3	34.6	12	308.3	35.8	10	312.5	43.9	4	305.5	51.9	6	294.7	49.9
1974 - 1978	1	280.0	0.0	2	316.0	9.9	2	289.0	24.0	0	-----	----	0	-----	----
1975 - 1979	9	307.8	23.7	4	324.5	21.0	2	308.5	9.2	2	294.5	33.2	0	-----	----

Table 14

COMPARISON OF SET-II SCORES FOR ELEMENTARY TEACHERS ACROSS FIVE YEARS

Factor	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I RAPPORT															
*1973 - 1977	0	----	----	9	5.06	1.56	7	5.76	0.52	8	5.27	0.69	2	5.05	7.10
1974 - 1978	20	5.14	1.70	8	5.63	0.32	6	5.46	0.35	2	5.09	0.12	2	5.05	0.70
1975 - 1979	13	5.83	0.74	7	5.44	0.22	5	5.71	0.71	3	5.47	0.62	1	5.00	----
II INTERACTIONAL COMPETENCE															
1973 - 1977	0	----	----	9	3.94	1.14	7	4.52	0.37	8	4.70	0.34	2	4.07	3.50
1974 - 1978	20	5.35	2.81	8	4.32	1.61	6	4.63	0.35	2	4.34	0.49	2	4.07	0.35
1975 - 1979	13	4.45	0.39	7	4.63	0.36	5	4.70	0.38	3	4.37	0.80	1	4.00	----
III STIMULATING INTERACTION STYLE (COMBINATION OF FACTORS I & II)															
1973 - 1977	0	----	----	9	9.04	2.65	7	10.24	0.85	8	9.98	0.81	2	9.12	1.10
1974 - 1978	20	9.54	2.54	8	10.41	0.49	6	10.09	0.68	2	9.43	0.61	2	9.13	0.10
1974 - 1979	13	10.28	1.01	7	10.06	0.52	5	10.41	0.72	3	9.85	1.41	1	9.00	----
IV UNREASONABLE NEGATIVITY															
1973 - 1977	0	----	----	9	7.20	1.78	7	8.10	1.06	8	8.03	0.92	2	9.63	1.60
1974 - 1978	20	8.06	2.07	8	9.17	0.61	6	8.50	3.40	2	7.06	2.91	2	9.64	0.16
1975 - 1979	13	8.68	0.99	7	7.99	0.80	5	8.40	0.83	3	7.65	2.13	1	7.29	----
V FOSTERANCE OF SELF-ESTEEM															
1973 - 1977	0	----	----	9	6.50	0.54	7	7.03	0.81	8	7.00	0.80	2	5.84	6.20
1974 - 1978	20	6.49	1.77	8	7.28	0.27	6	6.00	1.15	2	6.38	0.53	2	5.85	0.62
1975 - 1979	13	6.48	0.78	7	6.89	0.79	5	6.90	0.80	3	6.95	0.92	1	6.02	----

*Instrument not used in 1973-74 phase of the study.

Table 15

COMPARISON OF RATIOS FROM INTERACTION ANALYSIS FOR ELEMENTARY TEACHERS ACROSS FIVE YEARS

Ratio	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I/D															
1973 - 1977	29	1.30	1.13	16	1.34	0.70	13	1.23	0.97	10	4.23	4.30	5	1.91	0.83
1974 - 1978	28	1.40	2.04	16	1.92	3.20	10	3.92	4.87	8	0.78	0.42	5	3.01	3.01
1975 - 1979	20	2.62	2.37	13	1.59	1.21	10	1.78	0.55	5	2.84	0.43	4	2.01	0.53
i/d															
1973 - 1977	29	0.91	0.69	16	0.81	0.31	13	0.56	0.36	10	0.93	0.65	5	0.91	0.63
1974 - 1978	28	0.69	0.46	16	0.83	0.50	10	1.09	0.96	8	0.75	0.28	5	0.90	0.63
1975 - 1979	20	0.77	0.36	13	0.84	0.38	10	0.66	0.57	5	1.18	0.83	4	0.45	0.19
ST/TT															
1973 - 1977	29	0.66	0.65	16	0.44	0.21	13	0.47	0.28	10	0.89	1.49	5	0.47	0.47
1974 - 1978	28	0.81	1.23	16	0.98	1.23	10	0.56	0.27	8	0.80	0.47	5	0.35	4.70
1975 - 1979	20	0.54	0.20	13	0.79	0.46	10	0.50	0.26	5	0.44	0.29	4	0.39	0.09
Sil/Tot															
1973 - 1977	29	0.54	1.14	16	0.31	0.19	13	0.39	0.28	10	0.17	0.27	5	0.68	1.01
1974 - 1978	28	0.53	0.80	16	0.41	0.33	10	0.64	1.64	8	0.34	0.17	5	0.68	1.01
1975 - 1979	20	0.36	0.21	13	0.15	0.20	10	0.26	0.16	5	0.36	0.24	4	0.36	0.14
Lec/Tot															
1973 - 1977	29	0.41	0.14	16	0.40	0.13	13	0.53	0.18	10	0.43	0.26	5	0.32	0.21
1974 - 1978	28	0.38	0.14	16	0.42	0.13	10	0.38	0.12	8	0.30	0.10	5	0.32	0.21
1975 - 1979	20	0.48	0.11	13	0.67	0.94	10	0.40	0.22	5	0.35	0.25	4	0.65	0.10

The various ratios for the three secondary groups (Table 16) were very erratic and there were no patterns in evidence. This was probably due to the small sample sizes. Use of analysis of variance, indicated no significant differences across time or between the subjects at the two teaching levels.

Classroom Observation Record. Table 17 shows comparisons of the data gathered on the elementary subjects through the use of the Classroom Observation Record. In general, the subjects received higher ratings in their third year of teaching on Factors I and II. Ratings on Factor III (pupil behavior) remained about constant across the five years for the three groups of subjects. Again, this pattern was similar to that reported for the three groups of subjects and for the data gathered by the use of the principal ratings, student ratings, and by use of interaction analysis. Table 18 shows similar data for the secondary teachers across five years. Similar patterns to the elementary subjects were in evidence. Use of the analysis of variance technique indicated no significant differences across the years for the groups.

Tuckman Teacher Feedback Form. The Tuckman Teacher Feedback Form was introduced into the study in 1976. Therefore, data were available for two to four years for the subjects. Table 19 shows data for the elementary groups, while Table 20 shows data for the secondary groups. There was some evidence that mean scores for both the elementary and secondary subjects may have been higher in the third or fourth years while they were in the study. This was similar to the pattern reported for the use of other observational instruments.

Table 16

COMPARISON OF RATIOS FROM INTERACTION ANALYSIS FOR SECONDARY TEACHERS ACROSS FIVE YEARS

Ratio	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I/D															
1973 - 1977	13	2.47	3.12	12	1.81	1.35	11	1.43	1.38	3	1.00	1.73	6	2.14	3.26
1974 - 1978	2	0.53	0.24	2	0.68	0.28	2	0.63	0.49	0	----	----	0	----	----
1975 - 1979	8	2.61	2.73	4	0.98	0.73	2	1.50	0.12	2	1.22	1.01	0	----	----
i/d															
1973 - 1977	13	0.60	0.91	12	0.60	0.35	11	0.41	0.26	3	0.54	0.09	6	0.99	1.30
1974 - 1978	2	0.24	0.31	2	0.57	0.14	2	0.74	0.03	0	----	----	0	----	----
1975 - 1979	8	0.71	0.66	4	0.49	0.24	2	1.48	0.10	2	0.82	0.98	0	----	----
ST/TT															
1973 - 1977	13	0.45	0.35	12	0.64	0.48	11	0.31	0.11	3	0.43	0.36	6	0.48	0.20
1974 - 1978	2	0.40	0.42	2	0.88	0.87	2	0.65	0.31	0	----	----	0	----	----
1975 - 1979	8	0.46	0.19	4	0.46	0.23	2	0.36	0.14	2	0.44	0.19	0	----	----
Sil/Tot															
1973 - 1977	13	0.31	0.27	12	0.35	0.49	11	0.29	0.25	3	0.24	0.33	6	0.29	0.18
1974 - 1978	2	0.22	0.23	2	1.08	0.84	2	0.27	0.31	0	----	----	0	----	----
1975 - 1979	8	0.48	0.60	4	0.49	0.75	2	0.23	0.18	2	0.36	0.30	0	----	----
Lec/Tot															
1973 - 1977	13	0.63	0.21	12	0.50	0.19	11	0.62	0.12	3	0.63	0.03	6	0.40	0.28
1974 - 1978	2	0.63	0.49	2	0.40	0.71	2	1.08	0.98	0	----	----	0	----	----
1975 - 1979	8	0.58	0.19	4	0.63	0.15	2	0.41	0.09	2	0.50	0.14	0	----	----

Table 17

COMPARISON OF COR FACTORS FOR ELEMENTARY TEACHERS ACROSS FIVE YEARS

	Factor	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
		N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I	1973 - 1977	29	43.6	2.8	16	44.0	2.6	13	45.0	2.7	10	44.2	2.9	5	38.6	7.6
	1974 - 1978	28	44.3	2.7	16	45.3	2.8	13	45.2	2.6	9	44.4	2.5	5	46.6	7.6
	1975 - 1979	23	43.4	3.8	14	44.2	3.9	10	42.6	5.4	5	36.6	3.6	4	41.8	1.8
II	1973 - 1977	29	63.4	6.3	16	62.6	4.5	13	63.0	4.4	10	62.2	4.9	5	60.0	4.5
	1974 - 1978	28	66.9	4.3	16	67.2	7.9	13	67.0	5.6	9	67.1	4.4	5	62.0	4.4
	1975 - 1979	23	63.5	5.0	14	64.0	4.8	10	66.4	6.9	5	58.8	4.2	4	61.8	3.0
III	1973 - 1977	29	24.0	2.3	16	23.9	2.4	13	24.4	1.9	10	24.1	2.0	5	24.0	1.6
	1974 - 1978	28	24.2	2.3	16	24.4	2.5	13	24.5	2.8	9	24.6	1.8	5	24.0	1.6
	1975 - 1979	23	24.0	1.9	14	24.1	2.0	10	24.3	2.2	5	21.4	0.7	4	19.5	0.5

Table 18

COMPARISON OF COR FACTORS FOR SECONDARY TEACHERS ACROSS FIVE YEARS

	Factor	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
		N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I	1973 - 1977	13	39.2	5.3	12	37.6	6.3	11	43.6	4.4	5	44.2	7.1	6	38.2	7.6
	1974 - 1978	2	39.0	9.9	2	40.5	10.6	2	34.0	1.4	0	-	-	0	-	-
	1975 - 1979	9	40.1	4.0	4	39.2	3.4	2	45.0	1.4	2	34.5	1.6	0	-	-
II	1973 - 1977	13	59.8	6.8	12	56.3	9.9	11	65.9	6.4	5	69.6	5.1	6	61.0	9.9
	1974 - 1978	2	56.0	17.0	2	64.5	16.3	2	63.6	10.3	0	-	-	0	-	-
	1975 - 1979	9	59.3	3.4	4	62.0	2.8	2	71.5	1.7	2	55.5	2.5	0	-	-
III	1973 - 1977	13	21.0	3.0	12	19.3	4.0	11	22.4	1.7	5	21.8	2.8	6	21.3	5.3
	1974 - 1978	2	19.5	3.5	2	23.0	4.2	2	20.5	2.1	0	-	-	0	-	-
	1975 - 1979	9	24.1	1.6	4	23.4	1.7	2	27.5	0.7	2	19.5	2.9	0	-	-

Table 19

COMPARISON OF TUCKMAN RATINGS FOR ELEMENTARY TEACHERS*

Factor	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I CREATIVITY															
1973 - 1977	0	----	---	0	----	---	0	----	---	9	26.8	7.6	2	29.8	8.9
1974 - 1978	0	----	---	0	----	---	6	28.5	6.2	8	25.4	6.9	2	29.8	8.9
1975 - 1979	0	----	---	6	21.2	7.7	8	25.4	6.9	5	25.0	5.9		27.0	2.5
II DYNAMISM (DOMINANCE OF ENERGY)															
1973 - 1977	0	----	---	0	----	---	0	----	---	9	27.6	6.9	2	32.0	2.9
1974 - 1978	0	----	---	0	----	---	6	26.3	3.0	8	27.3	7.9	2	32.0	2.9
1975 - 1979	0	----	---	6	23.3	5.8	8	27.3	7.9	5	24.4	6.5		27.5	3.2
III ORGANIZED DEMEANOR (ORGANIZATION & CONTROL)															
1973 - 1977	0	----	---	0	----	---	0	----	---	9	34.1	4.5	2	32.6	3.2
1974 - 1978	0	----	---	0	----	---	6	35.7	6.4	8	36.5	4.1	2	32.6	3.2
1975 - 1979	0	----	---	6	33.5	4.9	8	36.5	4.1	5	29.4	5.1		32.5	2.9
IV WARMTH & ACCEPTANCE															
1973 - 1977	0	----	---	0	----	---	0	----	---	9	31.0	7.9	2	32.0	8.4
1974 - 1978	0	----	---	0	----	---	6	38.3	6.3	8	36.6	4.3	2	32.0	8.4
1975 - 1979	0	----	---	6	28.3	9.5	8	36.6	4.3	5	32.4	3.9		32.8	2.4

*Instrument introduced into study in 1976.

Table 20

COMPARISON OF TUCKMAN RATINGS FOR SECONDARY TEACHERS*

Factor	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
I CREATIVITY															
1973 - 1977	0	----	---	0	----	---	0	----	---	5	30.6	6.4	6	24.2	10.2
1974 - 1978	0	----	---	0	----	---	1	25.0	0.0	0	----	---	0	----	---
1975 - 1979	0	----	---	4	43.0	0.0	2	35.0	8.5	2	24.0	1.8	0	----	---
II DYNAMISM (DOMINANCE OF ENERGY)															
1973 - 1977	0	----	---	0	----	---	0	----	---	5	29.6	5.4	6	31.7	5.7
1974 - 1978	0	----	---	0	----	---	1	25.0	0.0	0	----	---	0	----	---
1975 - 1979	0	----	---	4	30.0	6.5	2	31.0	8.5	2	30.0	8.4	0	----	---
III ORGANIZED DEMEANOR (ORGANIZATION & CONTROL)															
1973 - 1977	0	----	---	0	----	---	0	----	---	5	40.2	2.3	6	30.5	11.0
1974 - 1978	0	----	---	0	----	---	1	28.0	0.0	0	----	---	0	----	---
1975 - 1979	0	----	---	4	42.3	0.0	2	37.0	0.0	2	29.0	1.3	0	----	---
IV WARMTH & ACCEPTANCE															
1973 - 1977	0	----	---	0	----	---	0	----	---	5	37.0	6.1	6	31.3	9.3
1974 - 1978	0	----	---	0	----	---	1	28.0	0.0	0	----	---	0	----	---
1975 - 1979	0	----	---	4	43.2	0.0	2	42.5	0.7	2	28.0	1.6	0	----	---

* Instrument introduced into study in 1976.

Summary

In summary, this section contains a comparison of data for three groups of teachers who were followed for five years after entrance into the profession. In general, comparisons of data across the five years for the groups indicated no significant changes. Also, there appeared to be no major significant differences across the teaching level of the subjects, i.e., elementary and secondary. It did appear, however, the subjects received higher ratings and were exhibiting the characteristics of good teachers at a higher level during their third or fourth year in the classroom. Thereafter, ratings and scores tended to decline. It was difficult to make generalizations and inferences from the data due to the attrition of subjects from the study over the five year periods.

Summary of Findings, Tentative Conclusions and Speculation

Five year studies such as the one described in this paper result in the collection of large amounts of data and at times it becomes very difficult to know what is the most important and what is the least important. The data and findings presented in this paper were felt to be of value and interest to the reader. Other information is available that can corroborate the findings and speculation presented.

Summary of Findings

1. There were no significant differences in the subjects who entered the study in each of the three years.

2. The subjects in the study had achieved undergraduate grade point averages that were slightly higher than for the total group of graduates of the teacher education programs. At the time of admission to the University, they had achieved mean scores on the American College Test that were slightly below (0.5 points) the mean for all students entering the University during the same corresponding period. Scores from the National Teacher Examinations indicated the subjects in the study had achieved at the 48th percentile.

3. Based on scores from the California F-Scale, the subjects tended to be somewhat open-minded in their beliefs. Secondary subjects were slightly more close-minded than elementary subjects.

4. During their first year of teaching, there were basically no significant differences in ratings of the subjects by their principals, by the children they taught and by independent observers. There were few differences in ratings and scores between elementary and secondary subjects.

5. Mean ratings by the principals of the subjects across five years appeared to increase gradually to the third year and remain at about a constant level. There were no significant differences across groups or years.

6. In general, across the five years of the study, student evaluation of teaching at lower elementary, upper elementary and secondary levels increased from the first to the third year and then began to drop slightly. There were few significant differences across time and between elementary and secondary groups.

7. Examination of the indirect to direct teaching ratios from the use of interaction analysis indicated a general rise from the first to the third year. Thereafter, there was a slight drop for the elementary group. Because of attrition from the study it was difficult to make any statements relative to the secondary group. Other ratios computed as a part of the use of interaction analysis were erratic and there was no pattern for the elementary group.

8. Data collected through the use of interaction analysis with the sample of secondary subjects revealed an erratic pattern across the five year periods of the study. This was probably due to the small sample sizes and attrition from the study.

9. An examination of the data collected through use of the Classroom Observation Record indicated the highest mean ratings for both the elementary and secondary groups on the cognitive and affective dimensions occurred in the third year of teaching. However, there were no significant differences across years or between groups. Pupil behavior, as measured by the COR remained about constant across the five year periods.

10. Data collected through the use of the Tuckman Teacher Feedback Form was incomplete, since the instrument was not introduced into the study until 1976. However, it appeared the highest ratings may have been achieved by the subjects during their third year in the study.

Tentative Conclusions

The major conclusion of the study was the subjects as a whole appeared to be functioning at their highest level during the third year of teaching.

This was based on the subjects having received their highest ratings or scores on most instruments during their third year in the classroom. Adams (1979) reached a similar conclusion in a longitudinal study of teachers using equivalent instrumentation.

A comparison (not shown in this paper) of the data from this study with similar data collected with the same instrumentation in a variety of other studies indicated the subjects had achieved near mean scores and ratings. Therefore, it might be concluded that the subjects were at least average or better than average teachers.

An initial purpose of the implementation of the model was to effect change in the teacher preparation curricula of the University. Changes have been made in the curricula, however, these changes were not evident in the initial demographic data and first year ratings and scores achieved by the subjects. An examination of the data collected from first year graduates during 1976, 1977, and 1978 (not shown in this paper) indicated no significant differences between the three groups nor between the groups who served as subjects in this study. Therefore, it might be concluded that the curricula changes have not affected the students in the teacher preparation curricula of the University or the instrumentation was not sensitive enough to pick up the changes.

Speculation

The question arises, why did the subjects appear to be functioning at their highest level during the third year of teaching? At this time it is only possible to speculate why this phenomena occurred. Following is a summary of what was felt to be some of the more important points.

1. At the end of the third year of teaching, individuals receive tenure in the schools. It was felt that many teachers after this point may relax their teaching style since they feel that the pressure to achieve a stable position has been eased.

2. Initially, most individuals who enter the teaching profession have high ideals and expectations. It was felt that after several years, these ideals and expectations give way to an attitude that reflects the climate of the school. Acceptance of the norms of the school becomes more commonplace and the level of teaching may be reduced.

3. After several years of teaching it was felt that subjects may be losing enthusiasm for the profession. This may in part be due to changing life styles such as marriage, family and need for possible outside employment to meet financial needs.

4. After three or four years on the job, it was felt that many teachers may settle into a pattern of teaching that becomes relatively stable.

5. The instrumentation used in the study may not be sensitive enough to measure all of the changes that are occurring in the classroom and with the individuals.

6. Changes have been occurring within the teacher preparation curricula of the University. However, the changes are not being reflected in data that was collected. This may be a function of the instrumentation or the changes that have occurred in the curriculum.

Concluding Statement

This paper has presented the results of the implementation of a teacher evaluation model with three groups of teachers over five year periods. Although the results of the study may be somewhat disappointing, it does show that a model can be used to collect useful data. There are trends evident in the teaching styles of teachers. It appeared that the results have implications for inservice programs for teachers. The teaching levels that are reached in the third year should be maintained if at all possible. In turn, this could lead to improvement in the schools.

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